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## EUROPEAN PATENT APPLICATION

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G 01 N 33/58  
// G01N33/68, G01N33/74,  
G01N33/76, G01N33/543

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### §4 Immunoassay methods and reagents and methods for producing the latter.

§5 Immunoassay and methods for using fluorescent chelates of lanthanide metal ions in conjunction with immunoreactive bodies to permit fluorescent assay in liquid or dry samples. The assay reagent comprises a residue of an immunoreactive body linked to a residue of a protein or polypeptide. The protein or polypeptide is labelled by substitution with a ligand forming a fluorescent chelate with lanthanide metal ion such as europium. The reagent when used in an immunoassay, binds to the immobilized immunoreactive body and excess is washed away. The sample can be dried for later analysis by a suitable fluorometer.

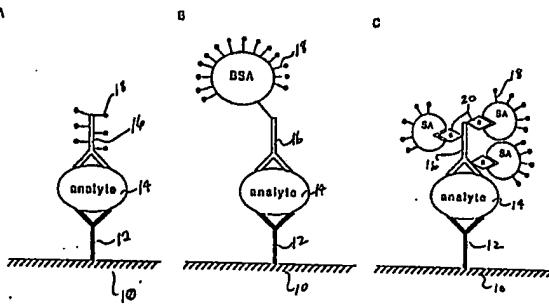


FIG. 7



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# EUROPEAN SEARCH REPORT

Application Number

EP 88 30 4116

DOCUMENTS CONSIDERED TO BE RELEVANT												
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl. 4)									
T	JOURNAL OF IMMUNOLOGICAL METHODS> vol. 112, no. 1, 9th August 1988, pages 43-52, Amsterdam, Netherlands; E.P. DIAMANDIS et al.: "Time-resolved fluorescence using a europium chelate of 4,7-bis-(chlorosulfophenyl)-1,10-phenantroline-2,9-carboxylic acid (BCPDA)" * whole document *	1-18	G 01 N 33/533 G 01 N 33/58 // G 01 N 33/68 G 01 N 33/74 G 01 N 33/76									
X,P	CHEMICAL ABSTRACTS vol. 108, no. 3, 18th January 1988, page 74; column 1; abstract no. 16385P, Columbus, Ohio, US; M.J. KHOSRAVI et al.: "Immunofluorometry of choriogonadotropin by time-resolved fluorescence spectroscopy, with a new europium chelate as label" * abstract *	1-5, 11, 13, 15, 17, 18										
X,P	CHEMICAL ABSTRACTS vol. 108, no. 3, 18th January 1988, page 309; column 1; abstract no. 18763J, Columbus, Ohio, US; M.A. CHAN et al.: "Time-resolved immunofluorometric assay of alpha-fetoprotein in serum and amniotic fluid, with a novel detection system" * abstract *	1-6, 10-18	TECHNICAL FIELDS SEARCHED (Int. Cl. 4) G 01 N									
X,D	EP-A-0 171 978 (HSC RESEARCH DEVELOPMENT CORP.) * pages 16-20; claims 1-10 *	1, 3, 5										
A	---	6-15										
X	EP-A-0 201 211 (WHITTAKER CORP.) * pages 14-27; claims 1-11 *	1, 3-5, 12 -/-										
<p>The present search report has been drawn up for all claims</p> <table border="1"> <tr> <td>Place of search BERLIN</td> <td>Date of completion of the search 27-04-1989</td> <td>Examiner DE KOK A.J.</td> </tr> <tr> <td colspan="3"> <b>CATEGORY OF CITED DOCUMENTS</b>            X : particularly relevant if taken alone            Y : particularly relevant if combined with another document of the same category            A : technological background            O : non-written disclosure            P : intermediate document         </td> </tr> <tr> <td colspan="3">           T : theory or principle underlying the invention            E : earlier patent document, but published on, or after the filing date            D : document cited in the application            L : document cited for other reasons            &amp; : member of the same patent family, corresponding document         </td> </tr> </table>				Place of search BERLIN	Date of completion of the search 27-04-1989	Examiner DE KOK A.J.	<b>CATEGORY OF CITED DOCUMENTS</b> X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document			T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document		
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## EUROPEAN SEARCH REPORT

Page 2

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DOCUMENTS CONSIDERED TO BE RELEVANT			CLASSIFICATION OF THE APPLICATION (Int. Cl. 4)
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	
A		11, 13, 16	
X	--- EP-A-0 191 575 (BECTON, DICKINSON AND COMPANY) * pages 18-23; claims 1-13 *	13-18	
A		1, 3-5, 12	
X	--- WO-A-8 601 604 (R. EKINS) * page 10, lines 10-17; claims 1-20 *	1, 13-15	
A	---	1-11	
A	CLINICAL CHEMISTRY vol. 31, no. 3, March 85, pages 359-370; Winston-Salem, North-Carolina, USA; I. HEMMILAE: "Fluoroimmunoassays and immunofluorometric assays" * page 363, column 1, lines 1-10; page 364, column 2, paragraph 3; page 367, column 1 *		
A	---	1, 8, 13- 18	TECHNICAL FIELDS SEARCHED (Int. Cl. 4)
	EP-A-0 077 671 (ORTHO DIAGNOSTIC SYSTEMS INC.) * claims 1-16; figure 1 *		
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